Amendments to the Claims

1. (Currently amended) A method of forming an aluminum base alloy member having a globular microstructure contained in a lower melting eutectic matrix, the method comprising the steps of:

(a) providing a body of a semi-solid aluminum base alloy comprising 3.5 to [less than 5] 4.9 wt.% Si, 3.6 to 5 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance aluminum, incidental elements and impurities;

(b) providing a mold for said member;

(c) injecting said alloy in semi-solid form into said mold;

(d) cooling said mold to solidify said semi-solid base aluminum alloy to provide said cast member having a globular microstructure contained in a lower melting eutectic matrix;

(e) aging said member at a temperature in the range of 200° to 400°F for a period of 1 to 24 hours.

2. (Original) The method in accordance with claim 1 wherein said alloy optionally includes at least one of the elements from the group consisting of 0.05 to 0.2 wt.% V, 0.01 to 0.05 wt.% Sr and 0.001 to 0.005 wt.% Be.

3. (Original) The method in accordance with claim 1 wherein said alloy contains 0.01 to 0.05 wt.% Sr.

4. (Original) The method in accordance with claim 1 wherein said member in the T5 condition has an elongation in the range of 3 to 8%.

5. (Original) The method in accordance with claim 1 wherein said member in the T5 condition has a tensile strength in the range of 35 to 50 ksi and a yield strength of 25 to 35 ksi.

6. (Original) The method in accordance with claim 1 wherein said member in the T6 condition has a tensile strength in the range of 45 to 65 ksi and a yield strength of 40 to 55 ksi.

7. (Original) The method in accordance with claim 1 including the step of solution heat treating said member prior to said aging step.

8. (Original) The method in accordance with claim 1 including solution heat treating said member at a temperature in the range of 800° to 1000°F for a period of 0.1 to 12 hours to provide a solution heat treated member.

9. (Original) The method in accordance with claim 1 including quenching said solution heat treated member prior to aging.

10. (Original) The method in accordance with claim 1 wherein said quenching is a cold water quench.

11. (Original) The method in accordance with claim 1 wherein said alloy contains 3.9 to 4.9 wt.% Si and 3.7 to 4.8 wt.% Cu.

12. (Currently amended) A method of forming an aluminum base alloy formed member having a globular microstructure contained in a lower melting eutectic matrix, the method comprising the steps of:

(a) providing a body of a semi-solid aluminum base alloy comprising 3.5 to [less than 5] 4.9 wt.% Si, 3.6 to 5 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance aluminum, incidental elements and impurities;

(b) providing a mold for said member;

(c) injecting said alloy in semi-solid form into said mold;

(d) solidifying said semi-solid base aluminum alloy in said mold to provide said formed member having a globular microstructure contained in a lower melting eutectic matrix;

(e) solution heat treating said member in a temperature range of 800° to 1000°F for a period of 0.1 to 12 hours to provide a solution heat treated member;

(f) quenching said solution heat treated member to provide a quenched member; and

(g) aging said quenched member to provide an aged member having a tensile strength in the range of 45 to 65 ksi and a yield strength in the range of 40 to 55 ksi.

13. (Original) The method in accordance with claim 12 wherein the alloy contains 3.5 to 4.9 wt.% Si and 3.7 to 4.8 wt.% Cu.

14. (Original) A method of forming an aluminum base alloy formed member having a globular microstructure contained in a lower melting eutectic matrix, the method comprising the steps of:

(a) providing a body of a semi-solid aluminum base alloy comprising 3.5 to 4.9 wt.% Si, 3.7 to 4.8 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance aluminum, incidental elements and impurities;

(b) providing a mold for said member;

(c) injecting said alloy in semi-solid form into said mold;

(d) solidifying said semi-solid base aluminum alloy in said mold to provide said formed member having a globular microstructure contained in a lower melting eutectic matrix; and

(e) aging said member to provide an aged member having a tensile strength in the range of 45 to 65 ksi and a yield strength in the range of 40 to 55 ksi in the T6 condition.

15. (Withdrawn) An aluminum base alloy suitable for forming in semi-solid condition into a member having improved strength, the member having a globular microstructure contained in a lower melting eutectic matrix, the member having a tensile strength in the range of 45 to 65 ksi and a yield strength in the range of 40 to 55 ksi in solution heat treated and aged condition, the alloy comprised of 3.5 to 5.5 wt.% Si, 3.6 to 5 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance comprised of aluminum, incidental elements and impurities, the member having a maximum grain size less than 150 μm.

16. (Withdrawn) The aluminum alloy in accordance with claim 15 wherein said alloy contains 3.5 to 4.9 wt.% Si and 3.7 to 4.8 wt.% Cu.

17. (Withdrawn) The aluminum alloy in accordance with claim 15 wherein said solution heat treatment is a treatment in a temperature range of 800° to 1000°F for 0.1 to 12 hours.

18. (Withdrawn) The aluminum alloy in accordance with claim 15 wherein said aging is a treatment in a temperature range of 200° to 400°F for a period of 1 to 24 hours.

19. (Withdrawn) The aluminum alloy in accordance with claim 15 wherein said member is cold water quenched after solution heat treating.

20. (Withdrawn) An aluminum base alloy suitable for forming in semi-solid condition into a member having improved strength, the member having a globular microstructure contained in a lower melting eutectic matrix, the member having a tensile strength in the range of 45 to 65 ksi and a yield strength in the range of 40 to 55 ksi in solution heat treated and aged condition, the alloy comprised of 3.5 to 4.9 wt.% Si, 3.7 to 4.8 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance comprised of aluminum, incidental elements and impurities, the member having a maximum grain size less than 150 μm.

21. (Withdrawn) An aluminum base alloy consisting essentially of 3.5 to 4.9 wt.% Si, 3.7 to 4.8 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance comprised of aluminum, incidental elements and impurities.

22. (Withdrawn) An aluminum base alloy consisting essentially of 3.5 to 4.9 wt.% Si, 3.6 to 5 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn,

max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance comprised of aluminum, incidental elements and impurities.

23. (Withdrawn) An improved aluminum alloy member formed from semi-solid aluminum alloy, the member having a globular microstructure contained in a lower melting eutectic matrix and having a maximum grain size of less than 150 μm and having a tensile strength in the range of 45 to 65 ksi and a yield strength of 40 to 55 ksi in solution heat treated and aged condition, the alloy for said member comprised of 3.5 to less than 5 wt.% Si, 3.6 to 5 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance aluminum, incidental elements and impurities.

24. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said alloy contains 3.5 to 4.9 wt.% Si and 3.7 to 4.8 wt.% Cu.

25. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said solution heat treatment is a treatment in a temperature range of 800° to 1000°F for 0.1 to 12 hours.

26. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said aging is a treatment in a temperature range of 200° to 400°F for a period of 1 to 24 hours.

27. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said member is cold water quenched after solution heat treating.

28. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said member has an average grain size in the range of 60 to 100 μm.

29. (Withdrawn) The improved aluminum alloy member in accordance with claim 23 wherein said member is a vehicular member.

30. (Withdrawn) An improved aluminum alloy formed member having a globular microstructure contained in a lower melting eutectic matrix having a maximum grain size less than 125 μm and having a tensile strength in the range of 45 to 65 ksi and a yield strength in the range of 40 to 55 ksi after solution heat treating in a temperature range of 800° to 1000°F for 0.1 to 12 hours, cold water quenching and aging for 1 to 24 hours in a temperature range of 200° to 400°F, the member comprised of 3.5 to 4.9 wt.% Si, 3.7 to 4.8 wt.% Cu, 0.3 to 1 wt.% Mg, max. 0.25 wt.% Fe, max. 0.1 wt.% Mn, max. 0.25 wt.% Zn, and max. 0.25 wt.% Ti, the balance aluminum, incidental elements and impurities.